

## [CLAIMS]

1. Method of preparing, by free radical emulsion polymerization, of  
5 ultrafine hydrophobic latex polymer or copolymer particles,  
making use therefor, in order to polymerize or copolymerize  
monomers or monomer mixtures respectively, of at least one  
compound selected from the group consisting of dimers and cobalt  
complexes, acting as a chain transfer agent (CTA), wherein said  
10 latex particles have an average particle size of less than 100  
nm, being more than 10 % lower than if prepared in the absence of  
said CTA, characterized in that said polymerization is conducted  
in a water-based reaction in the presence of a chain transfer  
agent and of a surfactant, wherein said surfactant is present in  
15 a concentration versus said monomer or monomer mixture of from 5  
up to 25 % by weight for a non-ionic surfactant or from 0.05 up  
to 10 % by weight for an ionic surfactant.
2. Method according to claim 1, wherein said surfactant is present  
20 in a concentration below twice its critical micelle  
concentration.
3. Method according to claim 1, wherein said dimers are selected  
from the group consisting of  $\alpha$ -methyl vinyl compounds or  $\alpha$ -ethyl  
vinyl compounds.
4. Method according to claim 2, wherein said dimers are selected  
25 from the group consisting of  $\alpha$ -methyl vinyl compounds or  $\alpha$ -ethyl  
vinyl compounds.
5. Method according to claim 1, wherein said dimer is selected from  
the group consisting of dimers or cross-dimers of  $\alpha$ -  
methylstyrene, methyl methacrylate, hydroxy ethylacrylate, benzyl  
30 methacrylate, allyl methacrylate, methacrylonitrile, glycidyl  
methacrylate, methacrylic acid, *tert*.-butyl methacrylate,  
isocyanatoethyl methacrylate, meta-isopropenyl- $\alpha,\alpha$ -dimethyl

isocyanate (TMI),  $\omega$ -sulfoxyalkyl methacrylates and alkali salts thereof.

6. Method according to claim 1, wherein said cobalt complex is  
5 selected from the group consisting of cobalt(II) and cobalt(III) complexes.
7. Method according to claim 6, wherein said cobalt(II) complex is bis(boron difluorodiphenyl-glyoximate)cobaltate(II) or its di-aqua adduct.
- 10 8. Method according to claim 1, wherein said dimer is a water-soluble oligomer having surface-active graft copolymers with a hydrophilic graft and a hydrophobic main chain.
9. Method according to claim 1, wherein said surfactant is an  
15 anionic surfactant, present in an amount of from 0.1 up to 5 % by weight versus said monomer or monomer mixture.
10. Method according to claim 1, wherein said latex particles have an average particle size of less than 100 nm, being more than 20 % less than if prepared in the absence of said CTA.
11. Method according to claim 1, wherein said latex particles have an  
20 average particle size of from 10 to 90 nm.
12. Use of ultrafine hydrophobic latex particles of polymers and copolymers, prepared according to the method of claim 1, in printing plates for computer-to-plate or computer-to-press applications, in silver halide based graphic, medical,  
25 cinematographic and micrographic film materials, in photoresist applications and in ink-jet media.